



Siempelkamp

Energy Systems

Energy Plants



www.siempelkamp.com

Siempelkamp Energy Systems: Your specialist

Use waste to power your panelboard plant

Panelboard production is energy intensive. Reducing energy costs can mean a substantial decrease in operating costs. SES energy plant reduces your fuel costs by utilizing all of all the waste material that is generated in the panel production process.

The energy plant can be fueled by anything from bark and start-up fibre to sander dust, trimmings and rejected panels. Our plant can also use low-grade fuel from outside the plant, such as sawmill chips and recycled wood materials unsuitable for production.



Doorskin Jeld Wen, Latvia

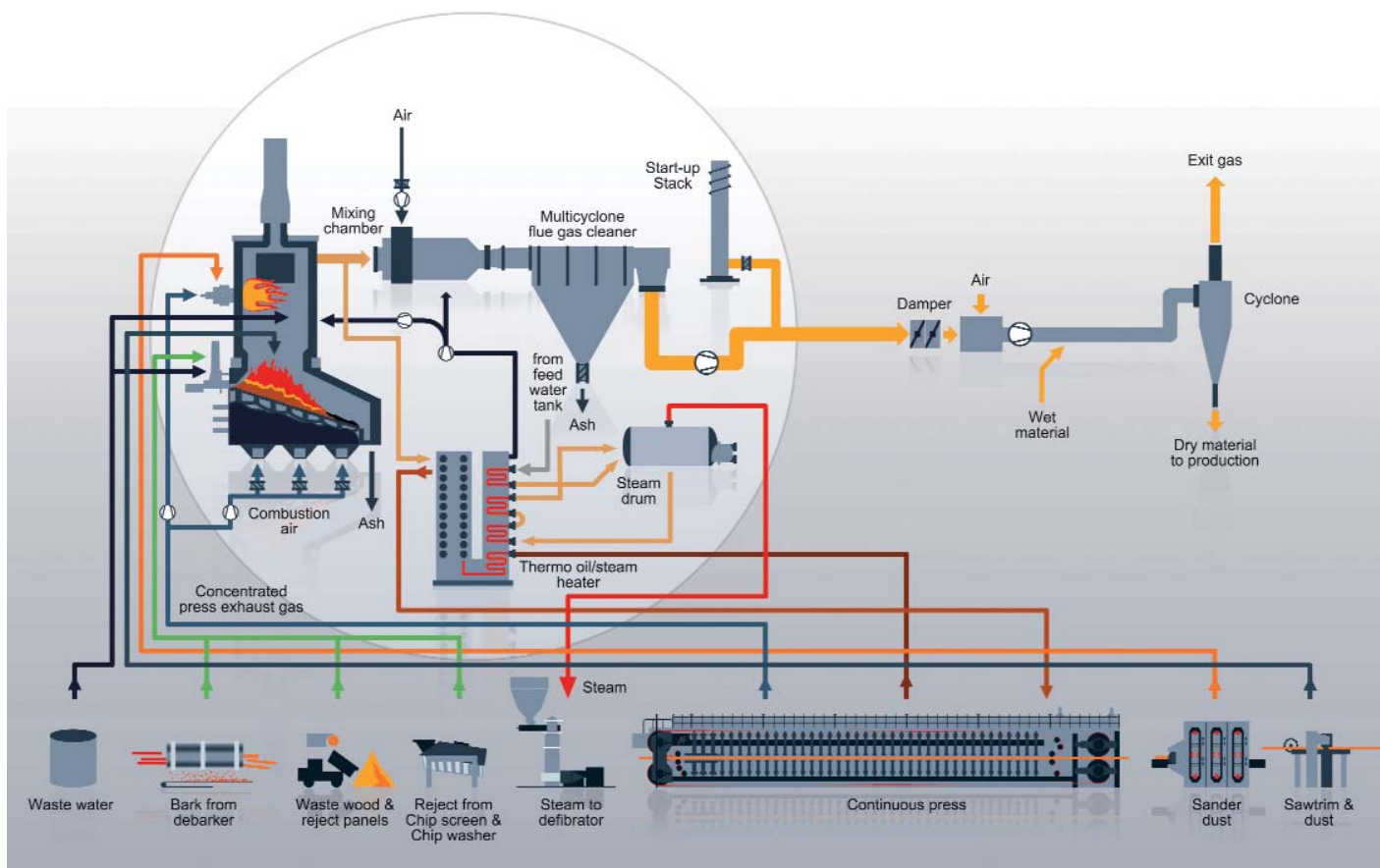


Masisa, Chile



Pfeiderer, Poland

for energy system concepts



Energy plant – MDF Process

Process – a long chain of knowledge

A mixture of wet and dry fuel in various forms (see the respective flow-sheets for each panelboard plant type) is burned in the combustion chamber on a reciprocating step grate.

The grate components are made in temperature-resistant materials that allow air cooling to be used. The use of the step grate with a refractory lined chamber allows the combustion of very wet fuels (up to 150% moisture content, dry basis).

Complete combustion is achieved and ash is the only material collected from the combustion system in the automatic wet de-ashing system.

To increase the efficiency of the combustion system it is possible to inject sawdust, trimmings or waste fibres in the lower chamber above the grate.

Sander dust and any additional natural gas or fuel oil can be burnt in the upper part of the combustion chamber. Specially designed burners ensure that the dust is fully combusted under conditions that minimize CO and NO_x formation.

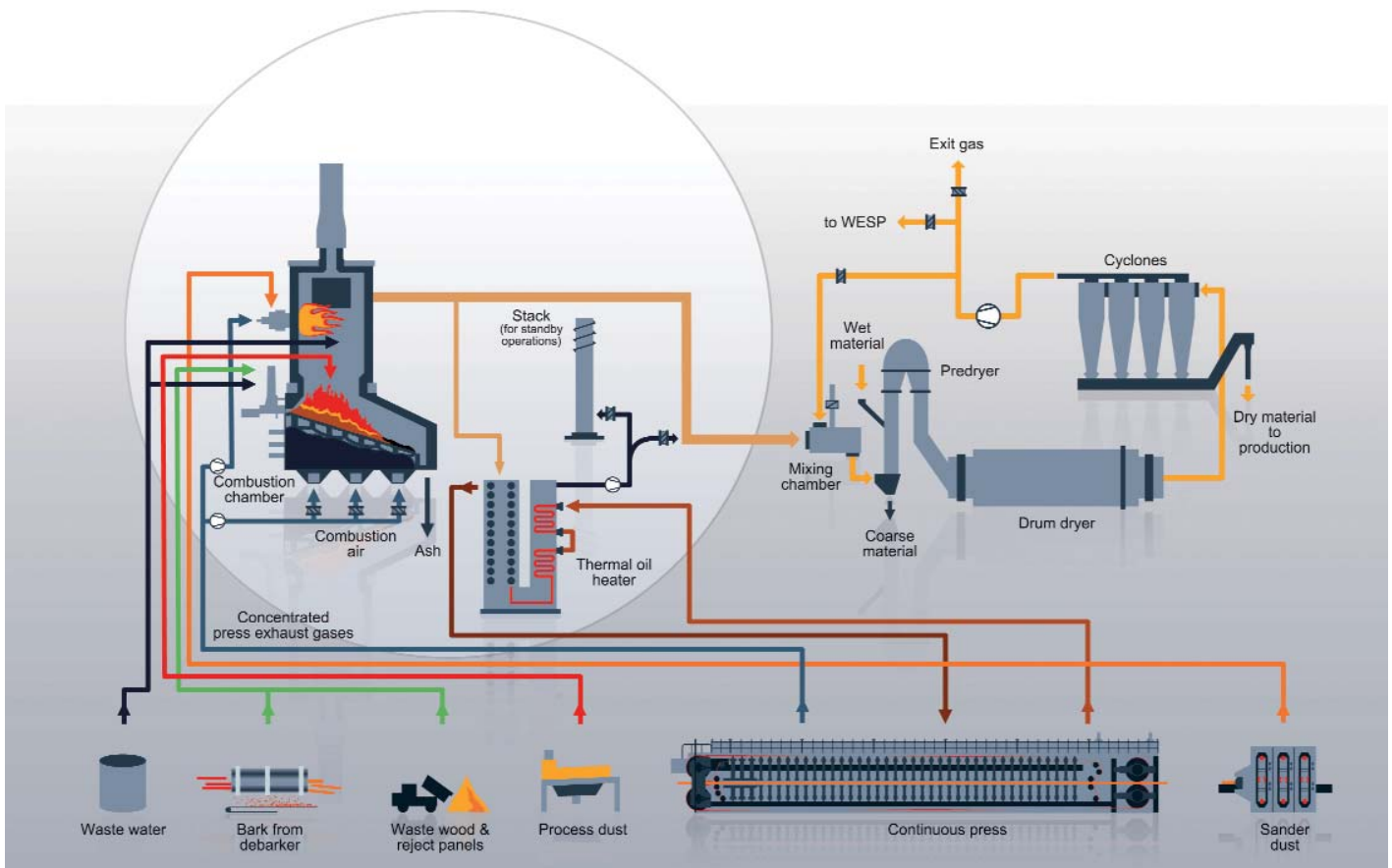
Primary and secondary combustion airflow, recirculated flue gas and the operation of the grate and burners are carefully controlled to optimize the combustion process.

The total plant control system ensures that it responds quickly and automatically to changes in the process heat demand.

Part of the hot gases produced in the combustion chamber is passed through the thermal oil/steam heater. The steam is produced direct with hot flue gases. The gas flow through the heater is controlled automatically to meet the plant's steam and oil heat demand. The hot thermal oil is supplied from the oil heater to the continuous press and any other consumers.

The entire generated flue gases, including the gas used in the steam/oil heater is passed directly to the dryer. The high combustion efficiency ensures that the amount of unburned material collected from the system is kept to a minimum.

Under these conditions the total system losses, including those from the stack are kept to less than 5%.



Energy plant – Particleboard Process

Emission control and environmental aspects

Several measures can be adapted to meet certain emission and environmental aspects:

- Flue gas recirculation for Temperature control in the combustion chamber
- Urea injection for NO_x reduction
- Use of waste water for pre-wetting the fuel or inject waste water in combustion chamber
- Use of waste air – from different areas in the plant – as combustion air

Our profile for your success

- 20 years of experience, 50 reference lines ranging in size from 12 MW to 85 MW
- Complete solutions for the panelboard industry (MDF, PB, OSB)
- Custom-tailored environmental technology
- Supply of new plants – upgrades for established plants
- Low maintenance and cleaning needs gives high availability
- Well developed feed forward control system ensures reliable and stable production. The dryer can be controlled by the same control system as the energy plant.
- Strong synergies to dryer suppliers (Büttner) to optimize interfaces.
- Training of the operating personal to achieve technical and environmental advantages.
- Service and modernization

The only single-source supplier of energy plants and dryers



Fibre dryer

Siempelkamp is the only single-source supplier of energy plants (SES) and dryers (Büttner). Our engineers work together to supply a seamless, trouble-free delivery. From the original process concept, through to the plant control system we design and supply equipment that works efficiently together to give a consistent and high quality result.



Drum dryer for particles

Service is one of our biggest selling points!

As we have provided a lot of improvements to the latest delivered energy plants we would like to make these available to our customers, who have operated their plants for many years and to customers, who are operating energy plants, which are not state of the art. This area includes besides the supply of spare parts

- Improvement to save energy e.g. by optimizing combustion and by modifying the regulation concept.
- Constructive improvement in terms of wear
- Reduction of emissions
- Retrofitting of dust and granulate burning systems



Siempelkamp

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Machinery and Plants



Siempelkamp

Maschinen- und Anlagenbau

Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG



Sicoplan

Engineering

Sicoplan N.V.



Siempelkamp

Handling Systeme

Siempelkamp Handling Systeme GmbH



Dr. E. Schnitzler

Industrieplanung

Zweigniederlassung Maschinen- und Anlagenbau



Siempelkamp

Energy Systems

Siempelkamp Energy Systems GmbH



ATR

ATR Industrie-Elektronik GmbH & Co. KG



STROTHMANN

Machines & Handling

W. Strothmann GmbH



Siempelkamp

Siempelkamp (Wuxi) Machinery Manufacturing Ltd.



CMC TEXPAN *

CMC S.r.l.



Büttner Gesellschaft für Trocknungs- und Umwelttechnik mbH

SCHERMESSER S.A. *

Handling Systeme

Schermesser S.A.

Representatives

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Siempelkamp do Brasil Ltda.

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Siempelkamp Canada Inc.

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Singapore

Siempelkamp Pte Ltd.

Spain

Siempelkamp Barcelona

USA

Siempelkamp L.P.

* Minority shareholding